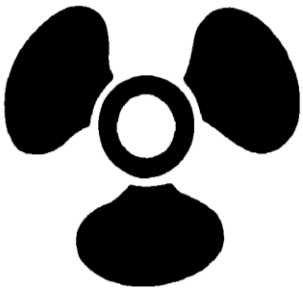
CHAPTER 51



MACHINIST'S MATE
(MM)

NAVPERS 18068-51F
CH-70

Updated: April 2017

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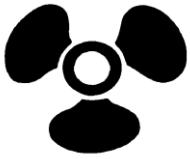
MACHINIST'S MATE, NUCLEAR POWER (MMN)

NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

MACHINIST'S MATE, NUCLEAR POWER (MMN)



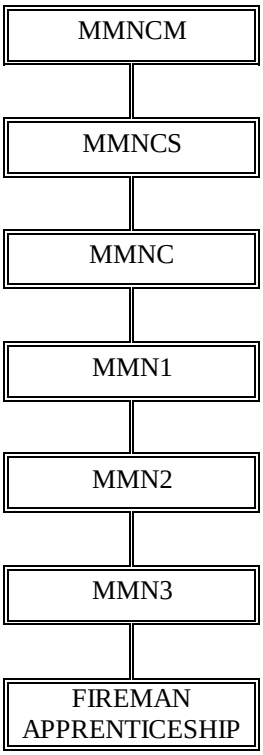
SCOPE OF RATING

Machinist's Mates, Nuclear Power (MMN) operate and maintain Naval Nuclear propulsion plants and associated equipment; supervise and administer naval nuclear propulsion plant operations; thoroughly understand reactor, electrical, and mechanical theory involved in the operation of the nuclear reactor, steam plant, propulsion plant, and auxiliary equipment; operate and repair systems associated with reactor plants, propulsion plants, and auxiliary support systems (e.g. air compressors, distilling plants, propulsion turbines, electric power generation turbines, shaft line components, air conditioning equipment, feed and condensate, steam, hydraulic, seawater systems, air, potable water, lubricating oil and oil purification, reactor auxiliary and support systems pumps, valves, and heat exchangers); perform tests, transfers, and inventories of lubricating oils, fuels, and water; and maintain records and reports on both surface and sub-surface ships.

This Occupational Standard is to be incorporated in Volume I, Part B, of the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068F) in Chapter 51.

GENERAL INFORMATION

CAREER PATTERN



Normal path of advancement to Chief Warrant Officer and Limited Duty Officer categories can be found in OPNAVINST 1420.1.

For rating entry requirements, refer to MILPERSMAN 1306-618.

SAFETY

The observance of Operational Risk Management (ORM) and proper safety precautions in all areas is an integral part of each billet and the responsibility of every Sailor; therefore, it is a universal requirement for all ratings.

Job Title **Job Code**

Propulsion Plant Mechanical Operator 003781

Job Family	NOC	Short Title (30 Characters)	Short Title (14 Characters)
Production	TBD	PROPULSION PLANT MECH OP	PPM OPERATOR

Pay Plan	Career Field	Other Relationships and Rules
Enlisted	MMN	NECs 3355, 3359, 3389

Job Description

Propulsion Plant Mechanical Operators operate and perform basic preventive maintenance on propulsion plant mechanical systems, support systems, turbines, pumps, and valves; operate reactor plants, propulsion plants, and auxiliary support systems; monitor operations of the shutdown reactor and propulsion plant; repair and maintain equipment; and perform work critical to the movement of naval tactical and strategic forces.

DoD Relationship		O*NET Relationship		
Group Title	*DoD Code*	*Occupation Title*	*SOC Code*	*Job Family*
Nuclear Power	166100	Nuclear Power Reactor Operators	51-8011.00	Production

Skills	Abilities
Operation Monitoring	*Written Comprehension*
Operation and Control	*Manual Dexterity*
Equipment Maintenance	*Problem Sensitivity*
Quality Control Analysis	*Written Expression*
Systems Analysis	*Arm-Hand Steadiness*
Management of Material Resources	*Visual Color Discrimination*
Reading Comprehension	*Oral Expression*
Writing	*Extent Flexibility*
Coordination	*Flexibility of Closure*
Speaking	*Number Facility*

ENGINEERING MANAGEMENT

Paygrade	Task Type	Task Statements
E4	CORE	Maintain small valve maintenance documentation

LABORATORY MANAGEMENT

Paygrade	Task Type	Task Statements
E5	NON-CORE	Analyze coolant discharge system samples
E4	NON-CORE	Analyze primary plant water (e.g. charging, discharge, reactor plant fresh water, steam generator, etc.)
E4	CORE	Analyze steam plant makeup water sources (e.g. distilling unit distillate, demineralized, potable, etc.)
E5	NON-CORE	Disestablish Radiological Controlled Areas (RCA)
E5	NON-CORE	Establish Radiological Controlled Areas (RCA)
E4	NON-CORE	Grant access to Radiological Controlled Areas (RCA)
E6	CORE	Maintain Radiological Controlled Area (RCA) records
E4	CORE	Sample lube oil systems (e.g. main, propulsion, shaft, turbine, etc.)
E5	CORE	Survey Radiologically Controlled Areas (RCA)

MECHANICAL MAINTENANCE

Paygrade	Task Type	Task Statements
E4	CORE	Adjust pump packing
E4	CORE	Adjust reducing valve set points
E4	CORE	Adjust relief valve set points
E4	CORE	Adjust valve packing
E5	NON-CORE	Calibrate mechanical gauges
E4	CORE	Clean reactor plant system and system components (e.g. main coolant systems, steam generator components, reactor plant fresh water systems, etc.)
E4	CORE	Clean secondary plant system and system components (e.g. sea water systems, main steam systems, condensate systems, etc.)
E4	CORE	Complete remote operability of key reactor plant valves checklists
E4	CORE	Lubricate reactor plant system, and system components (e.g. main coolant systems, steam generator components, reactor plant fresh water systems, etc.)
E4	CORE	Lubricate secondary plant system and system components (e.g. sea water systems, main steam systems, condensate systems, etc.)
E5	NON-CORE	Maintain Propulsion Plant Local Area Network (PPLAN) network settings
E5	CORE	Repair secondary plant system and system components (e.g. sea water systems, main steam systems, condensate systems, etc.)
E5	CORE	Tag out reactor plant components (e.g. instrumentation and control, mechanical, electrical, etc.)
E6	CORE	Troubleshoot mechanical components (e.g. compressors, turbines, pumps, valves, etc.)

MECHANICAL SYSTEMS OPERATIONS

Paygrade	Task Type	Task Statements
E4	CORE	Align air compressors (e.g. startups, shutdowns, etc.)
E4	CORE	Align air systems (e.g. change reducer settings, system lineup alterations, etc.)
E4	CORE	Align auxiliary feed systems (e.g. startups, shutdowns, etc.)
E4	CORE	Align auxiliary seawater systems (e.g. startups, shutdowns, cross-connects, etc.)
E4	CORE	Align bilge and oily water systems
E4	CORE	Align condensate and feed systems
E4	CORE	Align coolant support systems (e.g. charging, discharging, sampling, etc.)
E4	CORE	Align demineralized water systems (e.g. startups, shutdowns, tank fills, etc.)
E4	CORE	Align distilling units (e.g. startups, shutdowns, etc.)
E4	NON-CORE	Align hydraulic systems
E4	CORE	Align lube oil purification systems (e.g. purifier startups, purifier shutdowns, line ups to purify, etc.)
E4	CORE	Align main lube oil systems (e.g. startups, shutdowns, samplings, etc.)
E4	CORE	Align main seawater systems (e.g. startups, shutdowns, cross-connects, etc.)
E4	CORE	Align main steam systems (e.g. startups, shutdowns, cross-connects, etc.)
E4	CORE	Align potable water systems (e.g. startups, shutdowns, tank fills, etc.)

MECHANICAL SYSTEMS OPERATIONS (CONT'D)

Paygrade	Task Type	Task Statements
E4	NON-CORE	Align primary shield water systems
E4	CORE	Align propulsion lube oil systems (e.g. startups, shutdowns, samplings, etc.)
E4	CORE	Align reactor air systems (e.g. air flask refills, pressure control, blowdowns, etc.)
E4	CORE	Align reactor fill systems (e.g. startups, shutdowns, flow adjustments, shifting of water sources, etc.)
E4	CORE	Align reactor plant fresh water systems (e.g. startups, shutdowns, cooling adjustments, etc.)
E4	CORE	Align reactor plant sea water systems (e.g. startups, shutdowns, shifting of coolers, etc.)
E4	CORE	Align reboiler systems (e.g. startups, shutdowns, blowdowns, etc.)
E4	CORE	Align reserve and makeup feed systems (e.g. startups, shutdowns, tank fills, etc.)
E4	CORE	Align steam drain systems (e.g. fresh water, high pressure, low pressure, etc.)
E4	CORE	Align steam driven pumps (e.g. main feed, main circulate, turbine driven fire, etc.)
E4	CORE	Align steam generating systems (e.g. startups, shutdowns, samplings, blowdowns, etc.)
E4	CORE	Align steam plant auxiliary systems (e.g. steam, gland seal, gland exhaust, etc.)
E4	CORE	Align turbine generator lube oil systems (e.g. startups, shutdowns, samplings, etc.)
E4	CORE	Align valve operating systems (e.g. lineup changes, tank fills, manual operations, etc.)
E4	CORE	Analyze reactor plant system and system component pressure, temperature, and chemistry parameters (e.g. main coolant systems, steam generator components, reactor plant fresh water systems, etc.)
E4	CORE	Analyze secondary plant system parameters and system pressure, temperature, and levels (e.g. sea water systems, main steam systems, condensate systems, etc.)
E5	CORE	Perform main engine throttle operations
E4	NON-CORE	Survey primary valve radiological operations

QUALITY ASSURANCE

Paygrade	Task Type	Task Statements
E5	CORE	Test lube oil systems
E5	CORE	Test pneumatic systems (e.g. sea water, condensate and feed, fresh water, etc.)
E5	CORE	Test reactor systems
E5	CORE	Test secondary water systems (e.g. sea water, condensate and feed, fresh water, etc.)
E5	CORE	Test steam systems

Job Title **Job Code**

Propulsion Plant Mechanical Supervisor 003789

Job Family	NOC	Short Title (30 Characters)	Short Title (14 Characters)
Production	TBD	PROPULSION PLANT MECH SUP	PPM SUPERVISOR

Pay Plan	Career Field	Other Relationships and Rules
Enlisted	MMN	NEC 3365

Job Description

Propulsion Plant Mechanical Supervisors perform advanced mechanical systems operations; apply advanced level maintenance practices to propulsion plant mechanical systems, support systems, turbines, pumps, and valves; supervise operations, advanced maintenance, advanced testing, and training for personnel assigned to machinery divisions; draft correspondence; develop administrative programs; perform risk management; repair and maintain equipment; and perform work critical to the movement of naval tactical and strategic forces.

DoD Relationship

Group Title	*DoD Code*
Nuclear Power	166100

O*NET Relationship

Occupation Title	*SOC Code*	*Job Family*
First-Line Supervisors/Managers of Production and Operating Workers	51-1011.00	Production

Skills	Abilities
Operation Monitoring	*Oral Expression*
Coordination	*Problem Sensitivity*
Management of Personnel Resources	*Written Comprehension*
Systems Evaluation	*Near Vision*
Complex Problem Solving	*Control Precision*
Installation	*Information Ordering*
Instructing	*Written Expression*
Repairing	
Speaking	

ENGINEERING MANAGEMENT

Paygrade	Task Type	Task Statements
E7	NON-CORE	Conduct remote operability of key reactor plant valves training
E6	CORE	Supervise division maintenance operations (e.g. electrical, mechanical, reactor control, etc.)
E6	CORE	Supervise shutdown and critical watch section operations

MECHANICAL MAINTENANCE

Paygrade	Task Type	Task Statements
E5	CORE	Repair reactor plant system and system components (e.g. main coolant systems, steam generator components, reactor plant fresh water systems, etc.)

MECHANICAL SYSTEMS OPERATIONS

Paygrade	Task Type	Task Statements
E4	CORE	Inspect reactor plant system and system component pressure, temperature, and chemistry parameters (e.g. main coolant systems, steam generator components, reactor plant fresh water systems, etc.)
E4	CORE	Inspect secondary plant system parameters and system pressure, temperature, and levels (e.g. sea water systems, main steam systems, condensate systems, etc.)
E6	CORE	Offload lube oil tanks
E6	CORE	Onload lube oil tanks

Job Title **Job Code**

Propulsion Plant Mechanical Manager 003797

Job Family	NOC	Short Title (30 Characters)	Short Title (14 Characters)
Production	TBD	PROPULSION PLANT MECH MGR	PPM MANAGER

Pay Plan	Career Field	Other Relationships and Rules
Enlisted	MMN	NECs 3365, 3359, 3389

Job Description

Propulsion Plant Mechanical Managers manage operations, maintenance, and training for personnel assigned to machinery divisions and engineering and reactor departments; review divisional and departmental administrative correspondence; perform divisional/departmental program and training audits; perform risk management; repair and maintain equipment; and perform work critical to the movement of naval tactical and strategic forces.

DoD Relationship

Group Title	*DoD Code*
Nuclear Power	166100

O*NET Relationship

Occupation Title	*SOC Code*	*Job Family*
Nuclear Power Reactor Operators	51-8011.00	Production

Skills	Abilities
Coordination	*Problem Sensitivity*
Management of Personnel Resources	*Selective Attention*
Monitoring	*Deductive Reasoning*
Systems Evaluation	*Oral Expression*
Judgment and Decision Making	*Information Ordering*
Management of Material Resources	*Visualization*
Quality Control Analysis	*Written Comprehension*

ENGINEERING MANAGEMENT

Paygrade	Task Type	Task Statements
E7	CORE	Administer continuous training exams
E7	CORE	Audit engineering and reactor department records
E7	CORE	Manage department drill programs
E7	CORE	Manage department training drills
E7	CORE	Manage equipment modifications (e.g. reactor, non-reactor, etc.)
E6	NON-CORE	Manage reactor fill system repair programs
E6	NON-CORE	Manage reactor fill system testing programs
E5	CORE	Plan division maintenance schedules, equipment availability, and personnel assignments